

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A unitized pinion seal for mounting between a first member and a second member rotatable relative to the first member, the unitized pinion seal comprising:

a sleeve including a first axially extending ring portion covered with an elastomeric seal layer adapted to mount rotationally fixed to the first member, a radially extending portion extending radially outward from an end of said first axially extending ring portion and a second axially extending ring portion extending axially from a radially outer end of said radially extending portion;

a retainer having a first axially extending portion slidably mounted directly to the second axially extending ring portion of said sleeve in a radial interference fit and having a second portion adapted to mount to the second member and a third portion engaging said radially extending portion of said sleeve, said first axially extending portion having a smaller diameter than said second portion of said retainer; and

a seal mounted to said retainer and engaging said first axially extending ring portion of said sleeve;

wherein said retainer is disengaged from said sleeve during assembly of said sleeve on to said first member.

2. (original) The unitized pinion seal of claim 1 wherein the first member is an axle companion flange and the second member is a carrier/bearing cage.

3. (previously presented) The unitized pinion seal of claim 1 wherein the sleeve is adapted to install to the first member with a radial interference fit such that the radial interference fit of the seal to the sleeve creates a greater axial retention load than an axial installation load created by the interference fit of the sleeve relative to the first member.

4. (currently amended) The unitized pinion seal of claim 3 wherein said retainer first axially extending portion and said third portion includes ~~are portions of~~ a first retainer ring engaging said sleeve prior to assembly of said unitized pinion seal to said first member.

5. (currently amended) The unitized pinion seal of claim 4, wherein said retainer second portion ~~includes~~ is a portion of a second retainer ring engaging the seal body.

6. (canceled)

7. (currently amended) A unitized pinion seal for mounting between a first member and a second member rotatable relative to the first member, the unitized pinion seal comprising:

a sleeve adapted to mount rotationally fixed to the first member, said sleeve including an outer surface having a ramp portion disposed between an axially extending forward cylindrical portion and an axially extending rear cylindrical portion, wherein said axially extending forward cylindrical portion has a smaller diameter than said axially extending rear cylindrical portion; and

a seal supported by a retainer, said retainer including a first axially extending portion which is mounted directly to an axially extending surface of the sleeve in a radial interference fit and said retainer including a second portion adapted to mount to the second member, said seal including a first seal lip engaging said axially extending forward cylindrical portion and a second seal lip engaging said axially extending rear cylindrical portion.

8. (new) The unitized pinion seal of claim 7, wherein the seal includes a third seal lip positioned adjacent the second seal lip and engaging said axially extending rear cylindrical portion of said sleeve.

9. (new) The unitized pinion seal of claim 7, wherein the sleeve further comprises a radially extending portion extending radially outward from an end of said axially extending rear cylindrical portion and an axially extending ring portion extending axially from a radially outer end of said radially extending portion, said retainer first axially extending portion being mounted to a surface of said axially extending ring portion of said sleeve; and wherein said axially extending ring portion and said axially extending forward and rear cylindrical portions of said sleeve each include a length greater than a length of said radially extending portion of said sleeve.

10. (new) The unitized pinion seal of claim 9, wherein said first axially extending portion of said retainer is a portion of a rigid first retainer ring, said first retainer ring including a first radially extending portion extending from one end of the first axially extending portion and a second radially extending portion extending from an opposite end of said first axially extending portion and engaging said radially extending portion of said sleeve.

11. (new) The unitized pinion seal of claim 10, wherein said second retainer portion is a portion of a second retainer ring, said second retainer ring including a first radially extending portion extending radially inward from an end of said second retainer portion and supporting said seal, and a third radially extending portion extending from another end of said second retainer portion in a radially outward direction, said third radially extending portion engaging said first radially extending portion of said first retainer ring and adapted to mount to said second member.

12. (new) The unitized pinion seal of claim 7, wherein the sleeve further includes an elastomeric seal layer covering a surface of the axially extending forward and rear cylindrical portions of the sleeve adapted to mount rotationally fixed to the first member, the elastomeric seal layer including a pair of raised sealing ribs, with one of the ribs positioned adjacent the axially extending forward portion and the other positioned adjacent the axially extending rearward portion of the sleeve.

13. (new) The unitized pinion seal of claim 1, wherein said seal includes first and second sealing lips engaging said first axially extending ring portions of said sleeve.

14. (new) The unitized pinion seal of claim 13, wherein said seal includes a third sealing lip engaging said first axially extending ring portion of said sleeve.

15. (new) The unitized pinion seal of claim 1, wherein the first and second axially extending ring portions of said sleeve include a length greater than a length of said radially extending portion of said sleeve.

16. (new) The unitized pinion seal of claim 5, wherein said third portion of said first retainer ring includes a radially extending portion extending from one end of said first axially extending portion of said first retainer ring, said first retainer ring further comprising a second radially extending portion extending from another end of said first axially extending portion; and

wherein said second retainer ring includes a first radially extending portion extending from an end of said second portion and mounted to said seal, and a third radially extending portion extending from another end of said second portion of said second retainer ring and engaging said second radially extending portion of said first retainer ring and adapted to engage said second member.

17. (new) The unitized pinion seal of claim 1, wherein the elastomeric seal layer further comprises a pair of spaced apart raised rib portions adapted to engage the first member.

18. (new) The unitized pinion seal of claim 2, wherein the axle companion flange further includes a deflector, the deflector configured to engage the radially extending portion of the sleeve during assembly of the sleeve to the axle companion flange and disengage the sleeve from the first retainer ring.

19. (new) A unitized pinion seal for mounting between a first member and a second member rotatable relative to the first member, the unitized pinion seal comprising:

a sleeve including a first axially extending ring portion at least partially covered with an elastomeric seal layer adapted to mount rotationally fixed to the first member, a radially extending portion extending radially outward from an end of said first axially extending ring portion and a second axially extending ring portion extending axially from a radially outer end of said radially extending portion, said first and second axially extending ring portions of said sleeve having a length greater than a length of said radially extending portion of said sleeve, and said elastomeric seal layer including a pair of spaced apart raised ribs;

a first retainer having a first axially extending portion slidably mounted directly to the second axially extending ring portion of said sleeve in a radial interference fit, a second radially inward extending portion extending from one end of said first axially extending portion and engaging said radially extending portion of said sleeve, and a third radially extending portion extending radially outward from an opposite end of said first axially extending portion of said first retainer ring;

a second retainer ring having an axially extending portion adapted to engage said second member, a first radially extending portion extending radially outward from an end of said axially extending portion of said second retainer ring and adapted to engage said second member on one side and coupled to said first retainer ring on another side, and a second radially extending portion extending radially inward from an opposite end of said second retainer ring axially extending portion, said first

axially extending portion of said first retainer ring having a smaller diameter than said axially extending portion of said second retainer ring; and

a seal having a body portion mounted to said second radially extending portion of said second retainer ring, and first, second and third sealing lips extending from said body portion and engaging said first axially extending ring portion of said sleeve;

wherein said first retainer ring is disengaged from said sleeve by said first member engaging said radially extending portion of said sleeve during assembly of said sleeve on to said first member.